

More medium-scale integrated circuits

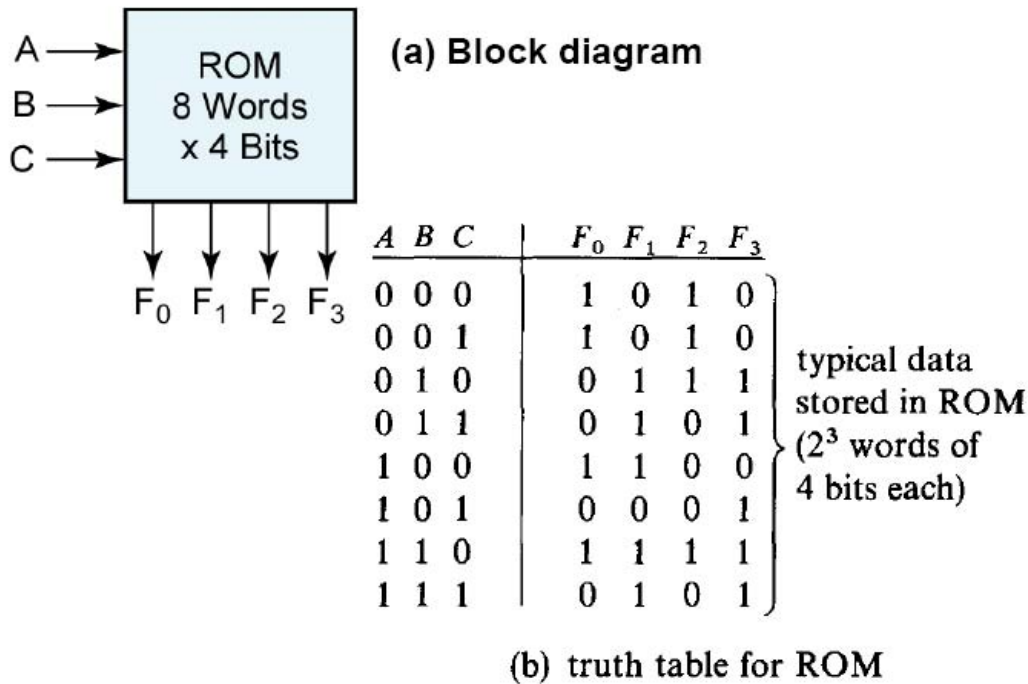


Figure 9-17: An 8-Word x 4-Bit ROM

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ROM stands for

Read-Only Memory

ROMs may be MSI circuits

or all the way to VLSI circuits.

A B C are called address

bits - they are input lines

F₀ F₁ F₂ F₃ are output

lines (words)

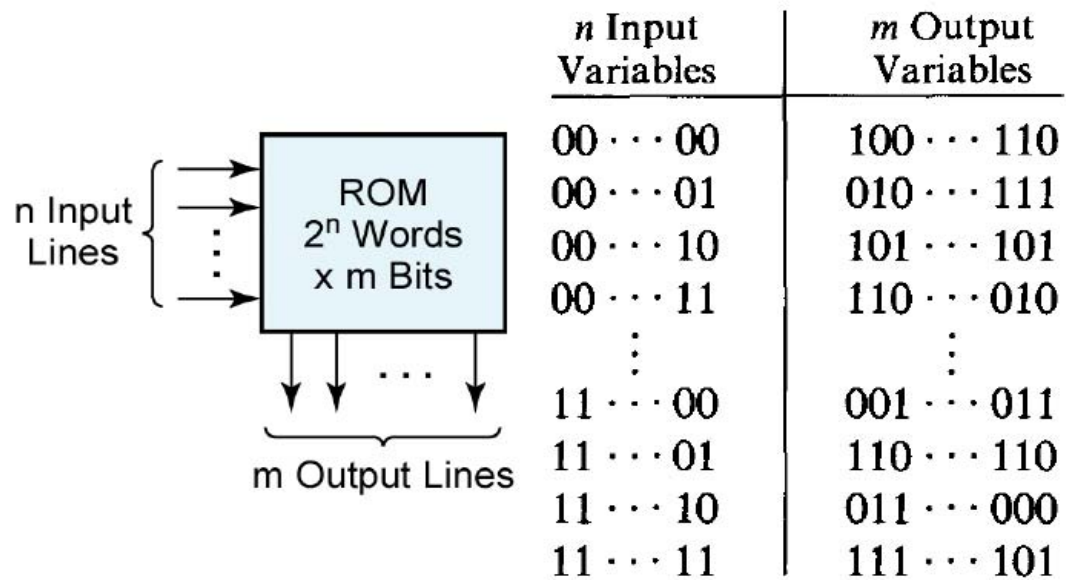


Figure 9-18: Read-Only Memory with n Inputs and m Outputs

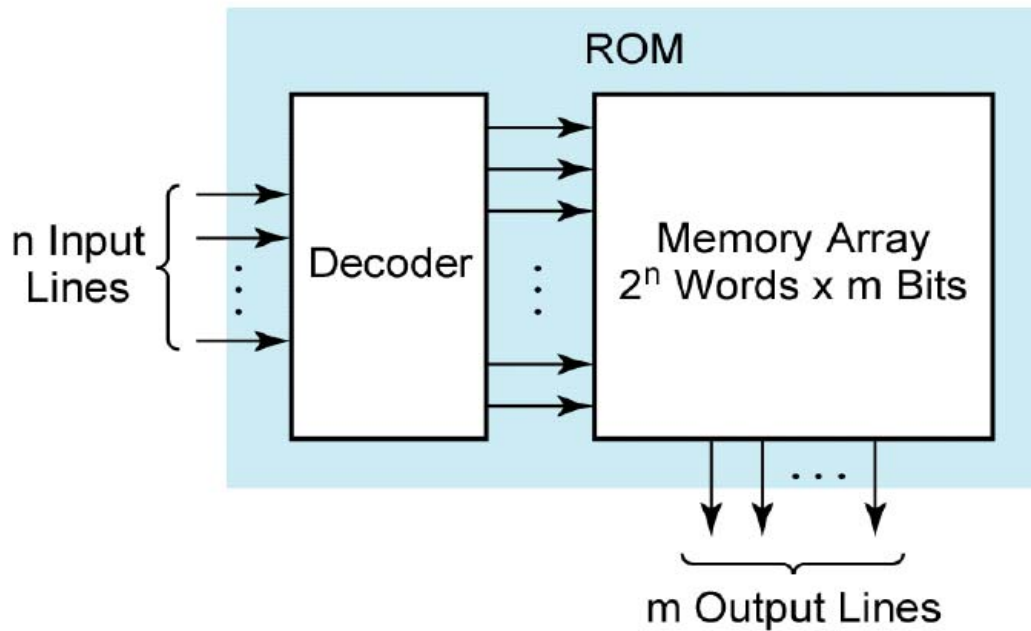


Figure 9-19: Basic ROM Structure

The n input lines of the ROM are the select lines of the decoder

The decoder is used to select a row in the memory array

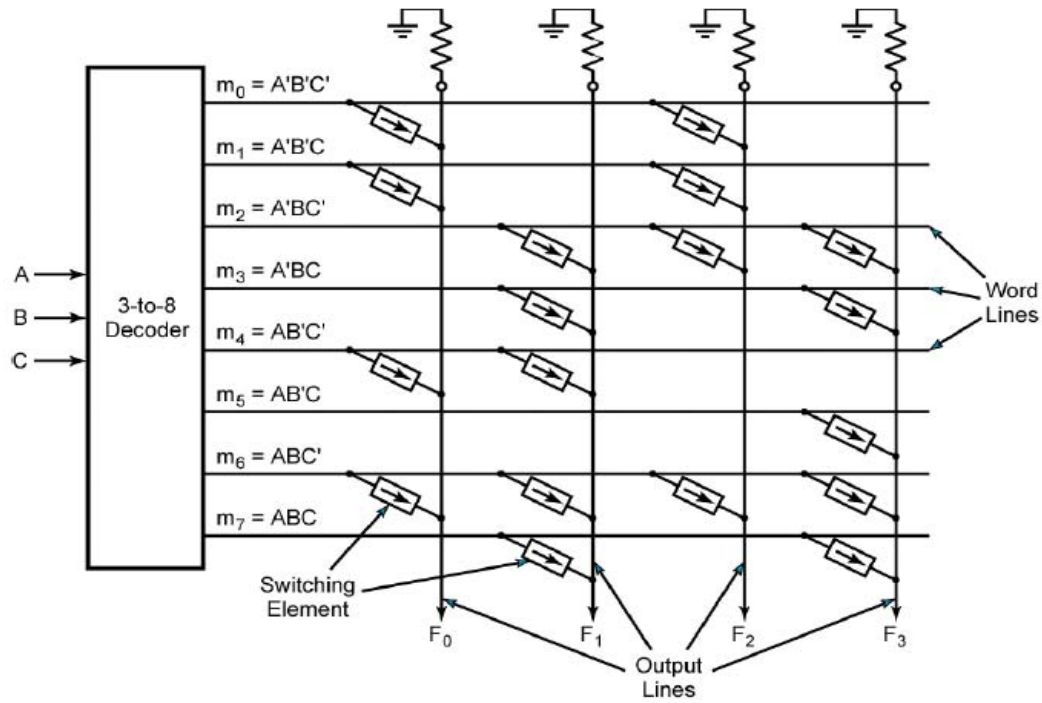


Figure 9-20: An 8-Word x 4-Bit ROM

Input				Hex Digit	ASCII Code for Hex Digit						
W	X	Y	Z		A ₆	A ₅	A ₄	A ₃	A ₂	A ₁	A ₀
0	0	0	0	0	0	1	1	0	0	0	0
0	0	0	1	1	0	1	1	0	0	0	1
0	0	1	0	2	0	1	1	0	0	1	0
0	0	1	1	3	0	1	1	0	0	1	1
0	1	0	0	4	0	1	1	0	1	0	0
0	1	0	1	5	0	1	1	0	1	0	1
0	1	1	0	6	0	1	1	0	1	1	0
0	1	1	1	7	0	1	1	0	1	1	1
1	0	0	0	8	0	1	1	1	0	0	0
1	0	0	1	9	0	1	1	1	0	0	1
1	0	1	0	A	1	0	0	0	0	0	1
1	0	1	1	B	1	0	0	0	0	1	0
1	1	0	0	C	1	0	0	0	0	1	1
1	1	0	1	D	1	0	0	0	1	0	0
1	1	1	0	E	1	0	0	0	1	0	1
1	1	1	1	F	1	0	0	0	1	1	0

Figure 9-22: Hexadecimal to ASCII Code Converter

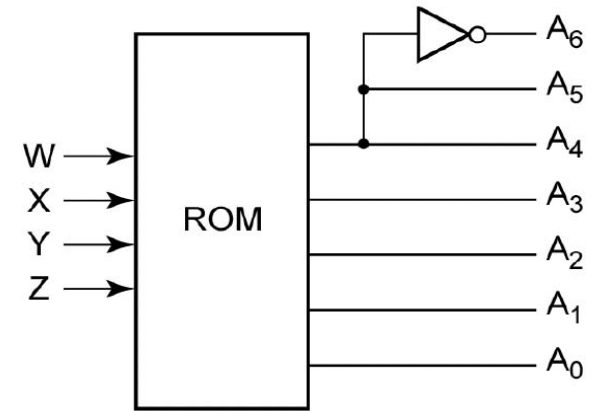


Figure 9-22: Hexadecimal to ASCII Code Converter

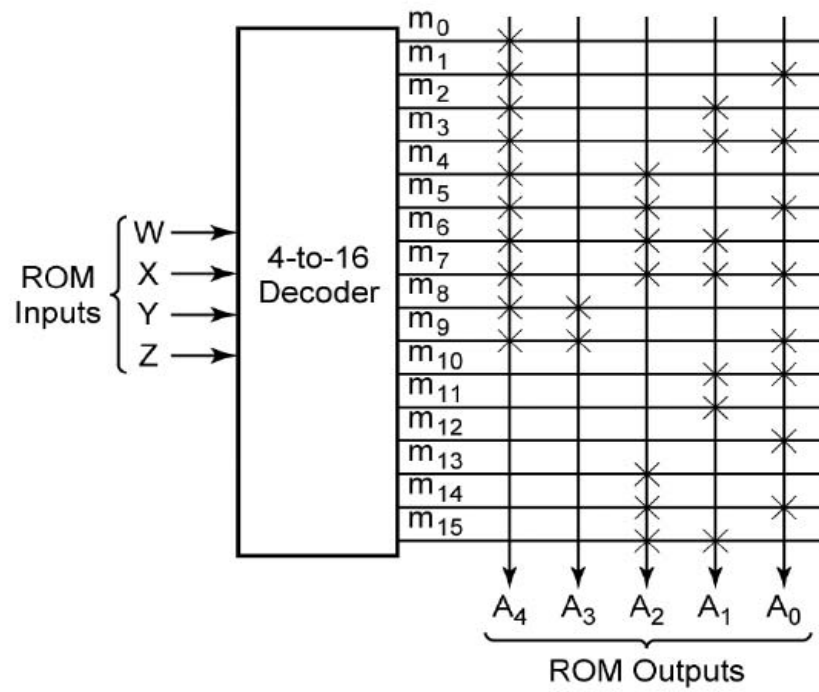


Figure 9-23: ROM Realization of Code Converter

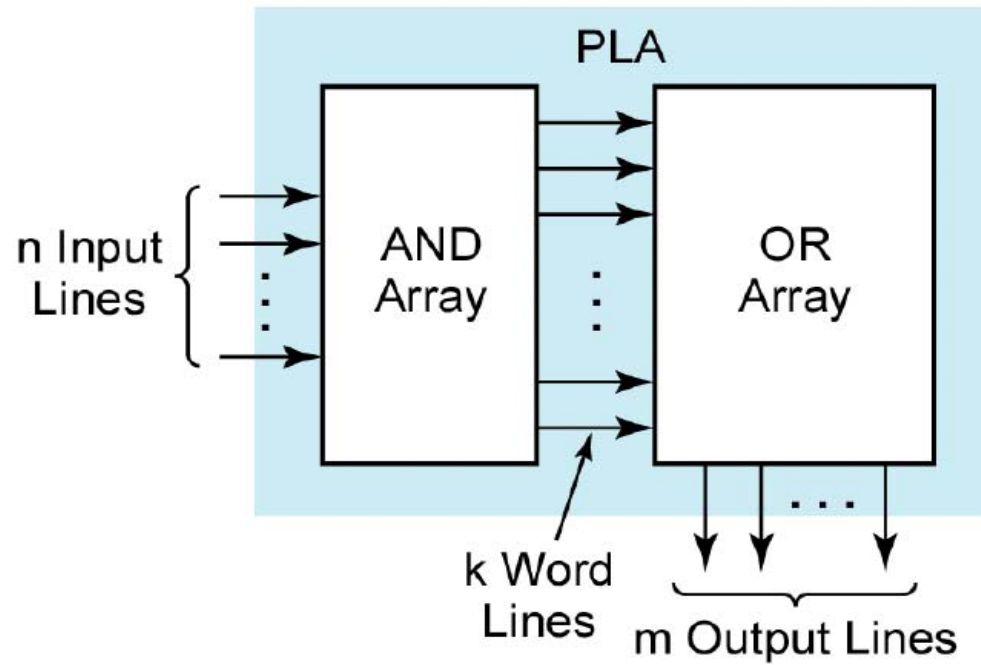


Figure 9-24: Programmable Logic Array Structure